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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/973,914	10/11/2001	Makoto Oyanagi	KYO-101	7458

7590 03/16/2006

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EXAMINER

HUNTSINGER, PETER K

ART UNIT PAPER NUMBER

2624

DATE MAILED: 03/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/973,914

Applicant(s)

OYANAGI, MAKOTO

Examiner

Peter K. Huntsinger

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 17 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 2/17/06 with respect to Iwai Patent 6,683,703 have been fully considered but they are not persuasive.

The applicant argues on pages 2 and 3 in essence that:

Photodiodes are not data storage.

a. The photodiodes provide a data value that is output. Whether that data is temporarily or permanently stored is irrelevant. Therefore, the photodiodes can be considered as data storage.

The applicant argues on page 3 in essence that:

Iwai does not disclose one line of a scan operation corresponding to one line of the scan data.

b. Iwai discloses that the photodiodes scanning corresponds to one line (col. 14, lines 55-62)

2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

3. Applicant's arguments, see pages 5 and 6, filed 2/17/06, with respect to the rejection(s) of claim(s) 1, 14, 19, and 20 under U.S.C. 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon

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further consideration, a new ground(s) of rejection is made in view of newly found prior art.

Claim Objections

4. Claim 6 is objected to because of the following informalities: Claim 6 is dependent on cancelled claim 5. Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The phrase wherein the relationship between the K and the F is prime to each other is indefinite. A prime number is a number that has no factor but itself and 1. It is the opinion of the examiner that the applicant intends the claim to read wherein the remainder between the division of the number of lines read and the number of lines fed is non-zero.

Claim Rejections - 35 USC § 103

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7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 2, 4, 6, 7, 10, 11, 13-15, 17, and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwai Patent 6,683,703 in view of Uchisako et al. Patent 6,896,354.

Referring to claim 1 Iwai discloses a multi-function printer which is a combination of a scanner and a printer (Fig. 1, col. 4, lines 58-62), comprising: a first data storage in which scan data scanned in by the scanner is stored, wherein one line of a scan operation of the scanner corresponds to one line of the scan data in the first data storage (photodiodes S1 to S7500 of Fig. 4, col. 10, lines 38-44). Iwai does not disclose expressly classifying data in compliance with print passes. Uchisako et al. disclose a classificational executer which reads out the data from a first data storage, wherein the printer performs printing by a plurality of print passes for one line of printed image and the classificational executer classifies the data in compliance with the print passes (S41 of Fig. 16, col. 20, lines 62-66); a second data storage in which the classified data is stored in compliance with the print passes (front and back ink nozzle memory, col. 20, lines 62-66); and a print executer which reads out the classified data from the data storage by each of the print passes, generates print image data having a data format suitable for a print processing on the basis of the read-out data without classifying the data, and drives a print head of the printer on the basis of the print image data in each

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of the print passes (S43 and S45 of Fig. 16, col. 21, lines 2-18). Iwai and Uchisako et al. are combinable because they are from the same field of printing systems. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to classify scanned data corresponding to print passes. The motivation for doing so would have been to increase the printing speed. Therefore, it would have been obvious to combine Uchisako et al. with Iwai to obtain the invention as specified in claim 1.

Referring to claim 2, Uchisako et al. disclose wherein a resolution of the printer head is coarser than a resolution to be printed on a print medium by the printer (col. 20, lines 41-53).

Referring to claim 4, Uchisako et al. disclose wherein there are two print passes for one line of the data (col. 20, lines 41-51), and the classificational executer classifies the data into even bits thereof and odd bits thereof and stores them in the second data storage (col. 20, lines 62-66).

Referring to claim 6, Uchisako et al. disclose wherein the classificational executer classifies the data into even bits and odd bits in every line of the data, and stores data of the even bits of the data in an even bit data storage in the second data storage every line of the data and stores data of the odd bits of the data in an odd bit data storage in the first data storage every line of the data (col. 20, lines 62-66), and wherein the print executer executes an interlaced processing in which the scan data is extracted from the even bit data storage and the odd bit data storage every other line respectively, and executes the printing (col. 20, lines 41-51).

Referring to claim 7, Iwai discloses wherein a classificational executer has a latch buffer of a predetermined data length, and latches the scan data of the predetermined data length into the latch buffer and obtains the scan data to be stored in the even bit data from even bits of the latch buffer and the scan data to be stored in the odd bit data from odd bits of the latch buffer (col. 8, lines 57-64).

Referring to claims 10 and 15, Uchisako et al. disclose the classificational executer. While not explicitly stated, it is inherent that the classificational executer of Uchisako et al. is constituted of hardware. A processor is needed to perform the act of moving the data, even if the classifying were merely code.

Referring to claim 11, Uchisako et al. disclose wherein the interlaced processing executed in the print executer is performed as a software processing (col. 7, lines 10-13).

Referring to claim 13, Iwai discloses the first data storage (photodiodes S1 to S7500 of Fig. 4, col. 10, lines 38-44). Uchisako et al. disclose the second storage provided in a different memory (front and back ink nozzle memory, col. 20, lines 62-66).

Referring to claims 14 and 20, Iwai disclose a multi-function printer which is a combination of a scanner and a printer (Fig. 1, col. 4, lines 58-62), comprising: a first data storage in which scan data scanned in by the scanner is stored, wherein one line of a scan operation of the scanner corresponds to one line of the scan data in the first data storage (photodiodes S1 to S7500 of Fig. 4, col. 10, lines 38-44). Iwai does not disclose expressly classifying data in compliance with print passes. Uchisako et al. disclose a classificational storing section which reads out the data from a first data

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storage and classifies the data according to an appropriate data format for each time of the X times of the movement of the print head in the main scan pass direction (S41 of Fig. 16, col. 20, lines 62-66) and which stores them in a second data storage (front and back ink nozzle memory, col. 20, lines 62-66); a print image data generator which sequentially reads out the classified data from the second data storage and generates a print image data on the basis of the read-out data for every reading out without classifying the scan data (S43 and S45 of Fig. 16, col. 21, lines 2-18); and a print executor which executes printing with the print head moved in the main scan pass direction on the basis of the print image data generated by the print image data generator (col. 20, lines 41-51). Iwai and Uchisako et al. are combinable because they are from the same field of printing systems. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to classify scanned data corresponding to print passes. The motivation for doing so would have been to increase the printing speed. Therefore, it would have been obvious to combine Uchisako et al. with Iwai to obtain the invention as specified in claim 14 and 20.

Referring to claim 17, Uchisako et al. disclose wherein the print image data generator also executes an interlaced processing in which data is extracted from the data stored in the second data storage in predetermined lines (col. 20, lines 41-51).

Referring to claim 19, Iwai disclose a control method for a multi-function printer, which is a combination of a scanner and a printer (Fig. 1, col. 4, lines 58-62), comprising the steps of: scanning data using the scanner, and storing the scanned data in a first data storage, wherein one line of a scan operation of the scanner corresponds to one

line of the scan data in the first data storage and reading out the scan data from the first data storage (photodiodes S1 to S7500 of Fig. 4, col. 10, lines 38-44). Iwai does not disclose expressly classifying data in compliance with print passes. Uchisako et al. disclose a classifying data read out from a first data storage according to a format that complies with print passes preformed for one line of printed image, according to which the printer generates print image data in actual printing (S41 of Fig. 16, col. 20, lines 62-66); storing the classified data in a second data storage in compliance with the print passes (front and back ink nozzle memory, col. 20, lines 62-66); reading out the classified data from the second data storage by each of the print passes; and generating the print image data, which has a data format appropriate for a print processing, on the basis of the read-out data without classifying the data; and driving a print head of the printer on the basis of the print image data in each of the print passes (S43 and S45 of Fig. 16, col. 21, lines 2-18). Iwai and Uchisako et al. are combinable because they are from the same field of printing systems. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to classify scanned data corresponding to print passes. The motivation for doing so would have been to increase the printing speed. Therefore, it would have been obvious to combine Uchisako et al. with Iwai to obtain the invention as specified in claim 19.

Referring to claim 21, Iwai discloses a multi-function printer which is a combination of a scanner and a printer (Fig. 1, col. 4, lines 58-62), comprising: a first data storage in which scan data scanned in by the scanner is stored, wherein one line of a scan operation of the scanner corresponds to one line of the scan data in the first

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data storage (photodiodes S1 to S7500 of Fig. 4, col. 10, lines 38-44). Iwai does not disclose expressly printing with a plurality of print passes. Uchisako et al. disclose a classificational executer which reads out the data from a first data storage, wherein the classificational executer classifies the first data in compliance with a position of the first data so that the printer performs printing by a plurality of print passes for one line of printed image (S41 of Fig. 16, col. 20, lines 62-66); a second data storage in which the classified first data is stored (front and back ink nozzle memory, col. 20, lines 62-66); and a print executer which reads out the classified first data from the second data storage by each of the print passes, generates print image data used for a print pass to be processed on the basis of the classified first data in accordance with the print pass to be processed, and drives a print head of the printer on the basis of the print image data in each of the print passes (S43 and S45 of Fig. 16, col. 21, lines 2-18). Iwai and Uchisako et al. are combinable because they are from the same field of printing systems. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to classify scanned data corresponding to print passes. The motivation for doing so would have been to increase the printing speed. Therefore, it would have been obvious to combine Uchisako et al. with Iwai to obtain the invention as specified in claim 21.

Referring to claim 22, Uchisako et al. disclose wherein a classification number of the first data is related to a number of the print passes (S43 and S45 of Fig. 16, col. 21, lines 2-18).

Referring to claim 23, Uchisako et al. disclose wherein the first data includes, a plurality of bits, and wherein the classificational executer classifies the bits included in the first data in compliance with the position of each bit in the first data (S43 and S45 of Fig. 16, col. 21, lines 2-18).

9. Claims 12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwai Patent 6,683,703 and Uchisako et al. Patent 6,896,354 as applied to claims 11 and 15, and further in view of well known prior art.

Referring to claims 12 and 16, Uchisako et al. disclose software processing but do not disclose expressly a central processing unit executing the software. Official Notice is taken that it is well known and obvious for a single central processing unit to execute software in a printer (see MPEP 2144.03). At the time of the invention it would have been obvious to utilize a single central processing unit to execute the software in the printer. The motivation for doing so would have been to reduce the cost of the printing system.

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwai Patent 6,683,703 and Uchisako et al. Patent 6,896,354, as applied to claim 6 above, and further in view of Wakasugi U.S. Patent 6,157,937.

Referring to claim 8, Uchisako et al. disclose classifying data into even and odd bit data but do not disclose expressly utilizing an even and odd look up table. Wakasugi discloses an even and odd look up table (col. 4, lines 1-3). Iwai and Wakasugi are

combinable because they are from the same field of image processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to utilize even and odd look up tables to convert data. The motivation for doing so would have been to improve the speed of determining the even and odd numbers. Therefore, it would have been obvious to combine Wakasugi with Iwai and Uchisako et al. to obtain the invention as specified in claim 8.

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwai Patent 6,683,703 and Uchisako et al. Patent 6,896,354, as applied to claim 6 above, and further in view of Merna et al. U.S. Patent 5,239,312.

Referring to claim 9, Uchisako et al. disclose a processing for reading out the data from one of the even bit data storage and the odd bit data storage, performing one print pass and feeding the print medium (col. 21, lines 2-18), and; a processing for reading out the data from the other of the even bit data storage and the odd bit data storage, performing one print pass and feeding the print medium (col. 21, lines 2-18). Uchisako et al. do not disclose expressly wherein the remainder between the division of the number of lines read and the number of lines fed is non-zero, which is how the examiner has determined claim 9 to read. Merna et al. disclose having the remainder between the division of the number of lines read and the number of lines fed is non-zero (Fig. 4, col. 6, lines 7-14). Iwai and Wakasugi are combinable because they are from the same field of printing systems. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to move the print head a number of lines

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which is different than the number of lines printed. The motivation for doing so would have been to improve image quality by avoiding the effects of deterioration on the individual print jets. Therefore, it would have been obvious to combine Wakasugi with Iwai and Uchisako et al. to obtain the invention as specified in claim 9.

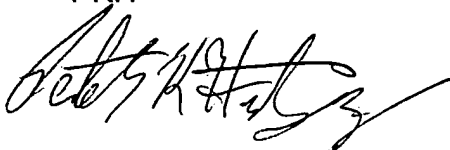
Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter K. Huntsinger whose telephone number is (571)272-7435. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Williams can be reached on (571)272-7471. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PKH




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